FEDERAL SUPPLY CLASS
6145

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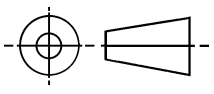

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PREPARED BY SAE SUBCOMMITTEE AE-8D

SAE The Engineering Society For Advancing Mobility Land Sea Air and Space®
INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE STANDARD

WIRE, ELECTRICAL, FLUOROCARBON-INSULATED, ABRASION RESISTANT EXTRUDED PTFE, NICKEL-COATED COPPER CONDUCTOR, 600 VOLT

AS22759/6
SHEET 1 OF 4

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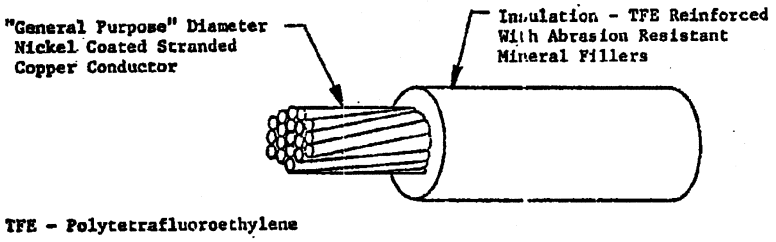
THE COMPLETE REQUIREMENTS FOR PROCURING THE WIRE DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE ISSUE IN EFFECT OF SPECIFICATION MIL-W-22759.



TFE - Polytetrafluoroethylene

Note: Outer surface is smooth, homogeneous PTFE with no mineral filler exposed.

TABLE I. CONSTRUCTION DETAILS.

Part No. 1/	Wire size	Stranding (Number of strands X AWG gage of strands)	Diameter of stranded conductor (inches)		Finished wire		
			(min)	(max)	Resistance at 20°C (68°F) (ohms/1000 ft) (max)	Diameter (inches)	Weight (lbs/1000 ft) (max)
M22759/6-24-*	24	19 X 36	.023	.026	25.9	.075 ±.005	6.0
M22759/6-22-*	22	19 X 34	.029	.033	16.0	.085 ±.005	8.0
M22759/6-20-*	20	19 X 32	.037	.041	9.77	.095 ±.005	10.0
M22759/6-18-*	18	19 X 30	.046	.051	6.10	.110 ±.005	14.0
M22759/6-16-*	16	19 X 29	.052	.058	4.76	.125 ±.005	18.0
M22759/6-14-*	14	19 X 27	.065	.073	3.00	.143 ±.007	25.0
M22759/6-12-*	12	19 X 25	.082	.092	1.89	.160 ±.007	34.5
M22759/6-10-*	10	37 X 26	.106	.114	1.24	.179 ±.007	48.0
M22759/6-8-*	8	133 X 29	.158	.173	.694	.248 ±.007	83.7
M22759/6-6-*	6	133 X 27	.198	.217	.436	.300 ±.010	127.
M22759/6-4-*	4	133 X 25	.250	.274	.275	.355 ±.015	190.

1/ PART NO.: The asterisks in the part number column, Tables I through III, shall be replaced by color code designators in accordance with MIL-STD-681. Examples: Size 20, white - M22759/6-20-9; white with orange stripe - M22759/6-20-93.

TABLE II. PERFORMANCE DETAILS.

Part No.	Abrasion resistance (Procedure I)				Bend testing			
					Mandrel diameter (inches) (±3%)		Test load (lbs) (±3%)	
	Resistance (inches of tape) (min) (initial and after immersion)	Weight support bracket	Weight (lbs)	Tension load (lts)	Life cycle (oven & bend tests) 1/	Cold bend test	Life cycle (oven & bend tests) 1/	Cold bend test
M22759/6-24-*	21	A	1.0	1.0	4.5	3.0	.75	2.0
M22759/6-22-*	24	A	1.0	1.0	4.5	3.0	.75	2.0
M22759/6-20-*	24	A	1.0	1.0	4.5	3.0	.75	2.0
M22759/6-18-*	28	A	1.0	1.0	4.5	3.0	1.00	2.0
M22759/6-16-*	30	A	1.0	2.0	6.5	3.0	1.00	3.0
M22759/6-14-*	24	B	3.0	2.0	6.5	6.0	1.00	3.0
M22759/6-12-*	24	B	3.0	2.0	6.5	6.0	3.00	3.0
M22759/6-10-*	24	B	3.0	2.0	10.0	6.0	3.00	5.0
M22759/6-8-*	34	B	3.0	2.0	10.0	6.0	3.00	5.0
M22759/6-6-*	36	C	3.0	2.0	10.0	6.0	6.00	10.0
M22759/6-4-*	36	C	4.25	2.0	10.0	10.0	6.00	10.0

1/ Also for bend tests after immersion.

ADDITIONAL REQUIREMENTS

TEMPERATURE RATING: 260°C (500°F) max conductor temperature

VOLTAGE RATING: 600 volts (rms) at sea level

SPARK TEST OF PRIMARY INSULATION: Not required

IMPULSE DIELECTRIC TEST: 8.0 kilovolts (peak), 100% test

INSULATION RESISTANCE: 50,000 megohms for 1000 ft (min)

WRAP TEST:
"Wrap back" test required; no cracking
Oven temperature; 313 ±2°C (595.4 ±3.6°F)

BLOCKING: 260 ±2°C (500 ±3.6°F)

SHRINKAGE: 0.125 inch max at 313 ±2°C (595.4 ±3,6°F)

WICKING (PROCEDURE I): 1.0% (max) weight increase

LOW TEMPERATURE (COLD BEND):
Bend temperature: -65 ±2°C (-85 ±3.6°F)
Dielectric test, 3000 volts (rms), 60Hz

THERMAL SHOCK:
Oven temperature, 260 ±2°C (500 ±3.6°F)
Max change in measurement
Sizes 24 through 12: 0.060 inch
Sizes 10 through 8: 0.100 inch
Sizes 6 through 4: 0.125 inch

FLAMMABILITY: Post-flame dielectric test not required

LIFE CYCLE:
Oven temperature 313 ±2°C (595.4 ±3.6°F)
Dielectric test, 2500 volts (rms), 60Hz

DIELECTRIC TEST AFTER IMMERSION: 3000 volts (rms), 60 Hz

ACID RESISTANCE:
Not required
Dielectric test, 3000 volts (rms), 60 Hz

CONDUCTOR STRAND ADHESION REQUIREMENTS: Shall be in accordance with 3.6.11 of MIL-W-22759.

ABRASION RESISTANCE AFTER IMMERSION: Specimens after immersion shall meet the same abrasion requirements as initial specimens; this test to be a quality conformance test subject to the same inspection level and acceptable quality level as the test for initial abrasion resistance.

HUMIDITY RESISTANCE: 50,000 megohms for 1000 ft, min insulation resistance after humidity exposure

SURFACE RESISTANCE: 500 megohm-inches (min), initial and final readings.

SMOKE: 313°C (595.4°F)

COLOR: In accordance with MIL-STD-104, Class 1; white preferred.

COLOR STRIPING OR BANDING DURABILITY: 250 cycles (500 strokes) (min), 500 grams weight

IDENTIFICATION DURABILITY: 125 cycles (250 strokes) (min), 500 grams weight

WIRE LENGTH REQUIREMENTS: Schedule A

SUPERSESSION DATA: The wire of this specification sheet, by part number, replaces and supersedes the wire of MS17412(AS) (canceled) in accordance with Table III.

TABLE III. SUPERSESSION BY PART NUMBER

Part number MS17412(AS)	Part number MIL-W-22759/6
MS17412-24	M22759/6-24-*
MS17412-22	M22759/6-22-*
MS17412-20	M22759/6-20-*
MS17412-18	M22759/6-18-*
MS17412-16	M22759/6-16-*
MS17412-14	M22759/6-14-*
MS17412-12	M22759/6-12-*
MS17412-10	M22759/6-10-*
MS17412-8	M22759/6-8-*
MS17412-6	M22759/6-6-*
MS17412-4	M22759/6-4-*